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NOV 13 2006

Ref: 8P-AR

David A. Finley, Administrator
Division of Air Quality
Wyoming Department of Environmental Quality
122 West 25th Street
Cheyenne, WY 82002

RE: Comments on proposed PSD permit for Black Hills Corporation, WYGEN 3 facility. AP-3934

Dear Mr. Finley:

Thank you for the opportunity to comment on Black Hills' WYGEN 3 proposed PSD permit. The public comment period will close Monday, 13 November 2006. We have the following comments:

The first three comments below relate to Wyoming Air Quality Standards and Regulations (WAQSR), Chapter 6, Section 2(a), definition of "Best Available Control Technology," which states that in no event shall application of BACT result in emissions of any pollutant which would exceed the emissions allowed under any applicable standard under 40 CFR Part 60 ("New Source Performance Standards").

Condition 8 - PC Boiler (ES3-01) Allowable Emissions – NOx Limit BACT vs. NSPS

The proposed BACT emission limit for NO_x is 0.05 lb/MMBtu, on a 30-day rolling average. The applicable NO_x emission standard in 40 CFR Part 60, Subpart Da, at 40 CFR 60.44Da(e)(1), is 1.0 lb/MWh, also on a 30-day rolling average. The permit currently references a limit of 1.6 lb/MWh, which will need to be changed to reflect the new limit for NO_x or removed. Wyoming's permit application analysis does not contain an analysis of relative stringency between BACT and NSPS for NO_x. Perhaps this calculation was completed, but it should have also been explained in the Statement of Basis. Our own analysis, assuming high and low gross boiler efficiencies of 30% and 38%, suggests that the proposed BACT limit is more stringent than the NSPS. We have included our calculations in Enclosure 1.

Condition 8 - PC Boiler (ES3-01) Allowable Emissions – SO_2 Limit BACT versus NSPS

The proposed BACT emission limits for SO_2 are 0.085 lb/MMBtu and 70% control efficiency, on a 30-day rolling average. The applicable emission standard in 40 CFR Part 60, Subpart Da, at 40 CFR 60.43Da(i)(1), is 1.4 lb/MWh or 95% control efficiency (i.e., either one

may be met), also on a 30-day rolling average. Wyoming's permit application analysis does not contain an analysis of relative stringency between BACT and NSPS for SO_2. Again this should be explained in the Statement of Basis. Our own analysis suggests that the BACT limit is more stringent that the NSPS and is contained in Enclosure 1.

Regarding the control efficiency, 70% seems to be taken from the outdated version of Subpart Da. We recommend the BACT figure be changed to 95% (from the revised Subpart Da) or higher, or else be removed from the permit. If coal quality is expected to vary substantially in terms of sulfur content, we would recommend retaining a control efficiency requirement, to ensure continuing optimum performance of the SO_2 scrubber. If, however, the efficiency requirement is removed from the permit, Condition 15(A)(iii) will need to be updated to omit "percent reduction requirements."

Condition 8 - PC Boiler (ES3-01) Allowable Emissions – PM/PM_{10} Limit BACT versus NSPS

The proposed BACT emission limit for PM/PM_{10} is 0.012 lb/MMBtu, apparently on a three hour average. The applicable emission standard in 40 CFR Part 60, Subpart Da, at 40 CFR 60.42Da(c), is 0.015 lb/MMBtu or 0.14 lb/MWh (i.e., either one may be met), on a daily average. Alternatively, the standard at §60.42Da(d) may be met, which is 0.03 lb/MMBtu and 99.9% reduction, on a daily average. Wyoming's permit application analysis does not mention relative stringency between BACT and NSPS for PM/PM_{10}. We note that a unit conversion analysis is not necessary in this case, since 0.012 lb/MMBtu is clearly at least as stringent as 0.015 lb/MMBtu, but the Statement of Basis should still explain the comparison between BACT and NSPS.

It is our understanding that Wyoming's actual intent is to express the averaging time for 0.012 lb/MMBtu as a three stack test run average (i.e., approximately three hours), not a daily average. The proposed permit, however, only cross-references NSPS subpart Da for compliance determinations, and subpart Da specifies daily averaging (at 40 CFR 60.48Da(g)(3)), not three-hour. Regardless of the intent, Condition 8 of the permit must specify the averaging time for the various PM emission limits. The same comment holds true for the CO emission limits.

Condition 8 - PC Boiler (ES3-01) Allowable Emissions – Condensible PM/PM_{10}

The proposed BACT emission limit for PM/PM_{10} does not include a limit for condensibles. Condensibles should be included in demonstration of compliance with the PM_{10} emission limit, as well as in the ambient impact analysis (which it was), and should be tested by Method 202. EPA national policy states that permitting authorities should include condensibles in PM_{10} emission limits in PSD permits. This policy is expressed in a letter dated March 31, 1994 from EPA's Office of Air Quality Planning and Standards (OAQPS) to the State of Iowa. This letter, Enclosure 2, states that "for evaluating compliance tests for determining ambient PM_{10} levels in PSD permits," states are "required to compute PM_{10} as the sum of in-stack and condensable PM_{10}." To be consistent with EPA policy, the WYGEN 3 permit must include condensibles in stack testing for demonstration of compliance with the PM_{10} BACT emission

limit. If the PM_{10} condensibles limit will be greater than the condensibles emission rate used in the ambient impact analysis, the analysis should be re-run.

The permit should also specify Method 202 for measurement of condensibles. The previously mentioned letter says "States must use Method 202 unless the EPA Administrator approves the use of an alternative method." The letter cites 40 CFR 51.212 as the basis for this statement and says the statement applies to the PSD permitting program.

Condition 14 – Continuous Emission Monitoring Systems

We recommend requiring a Particulate Matter Continuous Emission Monitoring System (PM CEMS) to demonstrate compliance with emission limits for total filterable particulate matter. We note that 40 CFR Part 60, Subpart Da is structured to encourage installation and use of PM CEMS by exempting sources from certain particulate matter monitoring requirements (e.g., COMS, bag leak detection systems, and annual stack tests) if PM CEMS is used. PM CEMS are already installed and used at a number of coal-fired electric utility sources. Further information on PM CEMS may be obtained from Dan Bivins of OAQPS, (919)-541-5244, bivins.dan@epa.gov. Also, condition 14(E) of the permit, which says each continuous monitor system shall comply with 40 CFR 60.47a, should refer to 40 CFR 60.49Da.

Condition 9 - Mercury – Target Emission Level Timeline

Condition 9(A) proposes an initial BACT mercury emission limit which is the same as the limit of 0.000097 lb/MWh on a 12-month rolling average in 40 CFR Part 60, Subpart Da. Condition 9(C) says a mercury control system shall be installed and operated, with a "target emission rate" of no more than 0.000020 lb/MWh on a 12-month rolling average, but does not specify a deadline. To be enforceable, Condition 9(C) must specify a deadline for installing the control system. In addition it should be made clear whether the target emission limit will be the new BACT limit.

Condition 14(D) – Opacity Monitoring System

The State should clarify that this is a continuous opacity monitoring system.

Condition 14 (E)(ii)(c) – Quality Assurance Plan Timeline

This permit condition requires submittal of a Quality Assurance plan for the continuous emission monitoring systems, to the State for approval. No deadline for submittal is specified. To be enforceable, this condition must specify a deadline for the submittal.

Condition 15 – Exceedance Provisions – Reference to NSPS Provisions; Typographical Error; Clarity

Conditions 15(A)(i) and (iii) cross-reference NSPS provisions (40 CFR Part 60, Subpart Da, §60.46a, §60.47a, and §60.48a.) The NSPS contain exemptions from emission limits for

startup, shutdown, malfunction, and emergencies. Thus, the permit terms could be read to indicate that emissions during these periods will not be counted in determining whether an exceedance has occurred. These exemptions are inappropriate for PSD BACT limits or limits needed to ensure protection of the NAAQS or increments. The permit must include clear language stating that the emission limits apply at all times, notwithstanding the exemptions that are available under the NSPS.

EPA's interpretations on this subject are reflected in a number of EPA documents, including the following:

1. Memorandum entitled, "Automatic or Blanket Exemptions for Excess Emissions During Startup and Shutdowns Under PSD," January 28, 1993, from John B. Rasnic to Linda M. Murphy. See Enclosure 3.

2. Memorandum entitled, "State Implementation Plans: Policy Regarding Excess Emissions During Malfunctions, Startup, and Shutdown," September 20, 1999, from Steven A. Herman and Robert Perciasepe to Regional Administrators. See Enclosure 4.

Also Condition 15 states that "compliance with the limits set forth in [the] permit shall be determined with data from the continuous monitoring systems required by Condition [14]." This language erroneously implies that continuous monitoring is required for compliance with all limits in the permit. Condition 8 and 9 set emission limits for NO_x, SO_2, PM/PM_{10}, CO and mercury, but Condition 14 of the proposed permit requires continuous monitoring only for NO_x and SO_2. (The condition also requires continuous monitoring for mercury, but with sorbent trap monitoring allowed as an alternative.) Condition 15 should be reworded to be consistent with Conditions 8, 9 and 14. Also, there is a typographical error in the first sentence in Condition 15. The cross-reference should be to Condition 14, not Condition 13. In Condition 15(A)(iii), the word "and" in the first line should be changed to "or."

Condition 11 – Initial Performance Testing; Condition 12 – Testing Within 90 Days – Director's Discretion Language

Condition 11 reads: "Initial performance tests, required by Condition 7 of this permit, shall consist of the following unless an *alternative is approved in writing by the Division.*" Condition 11 (B) & (F), as well as Condition 12 (A) through (E), utilize similar language referring to EPA test Methods *or equivalents*.

Federal rules for NSR permitting, at 40 CFR 51.160-166, require that certain procedures be followed to provide an opportunity for public and state and federal agency involvement in permitting decisions. See, e.g., 40 CFR 51.161; 40 CFR 51.166(q). In these permitting decisions, emission limits and work practice standards are important, but so are permit elements that could affect the ability to enforce emission limits and other permit requirements. For purposes of this discussion, the Region will refer to these as "significant terms."

Clearly these significant terms are relevant to the adequacy of a permit to meet its intended purpose. For example, a change to the averaging period for an emission limit or the methods for determining compliance with an emission limit could affect the ability of the permit to protect the NAAQS and integrity of the SIP. Protection of the NAAQS and protection of the SIP are explicit requirements for SIP-approved permit programs like Wyoming's. See, e.g., 40 CFR 51.160; 40 CFR 166(k). Failure to provide for public and governmental agency participation in decisions to change significant terms eliminates a required element of the permit process. This is the basis for the Region's comments. Alternative test methods should undergo the required elements of the permitting process.

Condition 16 – Maintenance and Inspection Requirements for Coal Conveyors – Permit Revision

Condition 16(A) requires daily inspections at each of the coal conveyor enclosures and transfer points. Furthermore, a daily check form shall be submitted to the Division for approval, and upon approval it shall be incorporated into the permit without administratively amending the permit. The requirement for daily inspection should make clear what sort of daily checks are supposed to be conducted (e.g., visible emissions checks, operation of water sprays, etc.). This additional language should be in the permit, and be subject to public comment. See the related comment above on Director's discretion.

Condition 16(B) requires a monthly preventative maintenance plan be instituted for each coal conveyor enclosure and dustless fogging system. Specific preventative maintenance requirements should be stipulated in the permit as this will determine compliance with PM/Opacity requirements. This additional language should be subject to public comment. See the related comment above on Director's discretion.

Condition 18 – Waste Ash Load-Out – Monthly Records/Moisture Calculation

Condition 18 requires a pug mill rotary mixer be used to mix ash and water to a consistent moisture content of approximately 30 to 40% prior to loading into the ash haul truck. In addition, monthly records of the quantity of water supplied to the pug mill spray nozzles, the quantity of ash loaded, and the calculated moisture content of the ash shall be kept. For enforceability a method for moisture calculation should be specified. Also, the permit should make clear what is meant by monthly records (e.g., individual recordings, monthly averages of daily recordings, a single entry per month, or something different). Further, the permit should require the records be available to the Division, the public, and EPA to determine compliance.

40 CFR Part 60 Subpart Da

The proposed permit application analysis refers to requirements from an outdated version of NSPS subpart Da. The permit application analysis should be updated to reflect the current rule, which incorporates numerous changes published in the Federal Register on February 27, 2006. The July 1, 2006 edition of the CFR reflects all the amendments to Subpart Da. All comments have been made with the new rule in mind and we trust that the Division will make all

the necessary administrative changes to the permit to reflect the new rule. All citations of Subpart Da should include "Da", for example 40 CFR 60.48Da, rather than 40 CFR 60.48a. Note that the relative numbering of some provisions has changed.

Thank you for the opportunity to comment and for working with us throughout the process. If you have questions or comments please contact me at (303) 312-6005, or Christopher Razzazian of my staff at (303) 312-6648.

Sincerely,

Richard R. Long, Director
Air & Radiation Program

cc: Bernie Dailey
Stewart Griner

Enclosure 1

Conversion Calculation

EPA's method for the conversion calculation assumes coal fired boilers to have gross efficiencies ranging from 30% to 38%. The conversion equation from lb/MMBtu to lb/MWh is:

(**X** lb/MMBtu)(**3.412** MMBtu/MWh)(**1/Efficiency**) = **Y** lb/MWh

For efficiencies of 30% and 38%, the low and high, the lb/MWh limit is shown below.

NO_x Conversion Calculation

NSPS Limit = 1.0 lb/MWh (30-day rolling average)

(**0.05** lb/MMBtu)(**3.412** MMBtu/MWh)(**1/0.30**) = **0.568** lb/MWh

(**0.05** lb/MMBtu)(**3.412** MMBtu/MWh)(**1/0.38**) = **0.448** lb/MWh

These are as stringent as the NSPS limit.

SO_2 Conversion Calculation

NSPS Limit = 1.4 lb/MWh (30-day rolling average)

(**0.085** lb/MMBtu)(**3.412** MMBtu/MWh)(1/**0.30**) = **0.966** lb/MWh

(**0.085** lb/MMBtu)(**3.412** MMBtu/MWh)(1/**0.38**) = **0.762** lb/MWh

These are as stringent as the NSPS limit.